are excluded from its protection; but we may ask, is there any good ground for supposing that they require it?

There are a few other points in which we should be disposed, had we room, to discuss some of Mr. Hancock's opinions—but at all times with the greatest respect, for such is justly due to his authority. His assertion, for instance, as to the amount of variability in Cuckoos' eggs (p. 25) will hardly change the mind of those who have seen long series of specimens from Germany or other countries, or recollect the evidence of foreign ornithologists adduced some years ago in these pages (NATURE, vol. i. p. 266). Nor is it by any means certain that *all* birds "do not discriminate nicely the colours or other characters of their eggs." None of the examples he quotes to that effect are of kinds which act as foster-parents to the Cuckoo, and their case therefore can hardly be said to apply to "the theory of Dr. Baldamus." Again, too, we must remark that Mr. Hancock must have been exceptionally unfortunate in performing the experiments of Herr Meves to explain the "bleating" or humming of the Snipe. The late Mr. Wolley put on record his acquiescence in their satisfactory nature (Proc. Zool. Soc. 1858, p. 201), and a more competent witness could not be easily found, especially when we consider that his evidence was given after he was acquainted with the extraordinary and entirely different noise made by the smaller species of Snipe which has not stiff *rectrices*. We must therefore demur to Mr. Hancock's statement that "the neighing or bleating of the Snipe results from the action of the wings, and that any sound produced by the tail-feathers is inaudible."

It remains for us to notice the plates, fourteen in number, by which this work is embellished. All of them are characteristic, and most of them excellent; a fact especially to be noticed, since they are chiefly designed from birds stuffed and mounted by Mr. Hancock. Yet most of us who are old enough to remember his beautiful contributions to the Great Exhibition of 1851, to say nothing of specimens of his skill which we may have since seen elsewhere, have therein no cause for surprise. In the art of taxidermy—for art it is with him in a high sense—Mr. Hancock has no equal now, and possibly never had but one, the late Mr Waterton; and the difference between specimens mounted as these are and the handiwork of ordinary bird-stuffers is apparent to anyone who has an eye for a bird. Whether Mr. Hancock's genius in this respect is innate, or whether it has been developed in him from a study of his fellow-townsman Bewick's labours, matters not much; both artists may be rated equally high as delineators of birds, while the younger one, as the pages of this publication prove, stands as a naturalist immeasurably above the elder.

OUR BOOK SHELF

Notes of Demonstrations on Physiological Chemistry. By S. W. Moore, F.C.S., &c. (London: Smith, Elder, and Co., 1874.)

THE Preface to the "Notes of Demonstrations on Physiological Chemistry" states "the want felt by the average medical student, viz., hints as to which are the most important points in practical work which he can be expected to acquire," and "the impossibility for a class of men with only three hours a week at its disposal for practical work to go through lengthy and uninteresting processes," induced the author to compile the "Notes," "so arranging them as to show the student methods that more nearly concern his immediate and future requirements." In other words, the book is not intended to treat thoroughly of any part of physiological chemistry, but only to remind the student of the principal points on which he is likely to be questioned, and to refer him for further information to the College Demonstration. To place a book of this kind in the hands of the medical student cannot be productive of good, as it enables him to acquire a pretence of knowledge that is, in his case especially, worse than the want of it. No one will deny it to be the duty of the teacher to confine the attention of students to those matters he regards as essential, and to pass over lightly those of less importance. But what will be the result if every teacher writes a book pointing out his mode of treating the subject? The effect will be to educate one-sided men, and to stifle all craving for further information. The only way to avoid this catastrophe is to recommend the use of a really good book, so that the student may acquaint himself with any part of the subject, or confine his attention solely to those points treated by the lecturer. The present work may be very useful to the author's pupils, but we cannot commend it as a satisfactory introduction to the subject of physiological chemistry.

The Microscope and its Revelations. By W. B. Carpenter, M.D., F.R.S. Fifth Edition. (London: J. and A. Churchill, 1874)

THE recent excellent investigations of Mr. Wenham, Col. Woodward, and others, on the optical principles of microscope construction and manipulation, together with the results obtained by the employment of immersion objectives, have added so much to our knowledge of the principles of minute investigation and the interpretation of the results obtained, that any standard work on "The Microscope" must necessarily require fresh editing. In the fifth edition, just published, of his well-known work on the subject, Dr. Carpenter shows how well he has kept pace with modern investigations. In it we find the most recent views on the nature of the markings on Diatoms fully entered into, the opinions of Col. Woodward, Mr. Stoddard, and Mr. Rylands, being clearly stated and criticised. The much discussed new principles and methods proposed by Dr. Royston-Piggott are in no wise omitted, the general tenour of the comments on their value being rather in their favour than otherwise. This last-mentioned subject the author has placed in the hands of Mr. H. J. Slack, the secretary to the Microscopical Society. In looking at the book as a whole, the question which we cannot help asking is, what is the limit to the points which should be touched upon in it? Why should certain tissues be described, and not others? Why should the organisation of some minute animals be entered into, while others are not referred to? We cannot answer this question ourselves, and think it will become more difficult to do so as every fresh fact in histology and minute zoology is added to the considerable mass already at our disposal.

Ueber Algebraische Raumcurven. Von Eduard Weyr.—*Ueber die Steiner'schen Polygone auf einer curve dritter Ordnung C^3 und damit zusammenhängende Sätze aus der Geometrie der Lage.* Von Prof. Karl Küpper.—*Die Lemniscate in Razionaler Behandlung.* Von Dr. Emil Weyr. (Prag, 1873.)

THE first memoir (27 pp.) treats of curves in space, and then discusses special space-curves, viz., those of the fifth order, concluding with the consideration of curves of the sixth order and second and third class. Reference is made to Prof. Cayley's papers on the subject in the *Comptes Rendus*, tome liv. (1862).

© 1875 Nature Publishing Group

The earlier part of the second memoir (28 pp.) treats of points, lines, and polygons, and swarms with results, upon the novelty or antiquity of which we cannot pronounce a judgment. We have then some proofs given of properties of the Tricusp, which is the envelope of the feet perpendicular lines of an inscribed triangle. Steiner's enunciations ("Crelle," vol. 53) have been demonstrated by Prof. Townsend ("Reprint from *Educational Times*," vol. iv. pp. 13–17), Prof. Cremona ("Crelle," vol. 64), and by other mathematicians.* An appendix of eleven pages, entitled "Ueber Raumcurven vierter Ordnung erster Art, und eine spezielle ebene curve vierter Ordnung C^4_1," closes the memoir.

The last memoir on our list (39 pp.) is a very interesting one, in which a great number of properties of the curve are established by means of its ordinary rectangular equation $(x^2+y^2)^2 - 2a^2(x^2 - y^2) = 0$. We should like to see this memoir in an English dress. On the authority of a German friend, we may say that it is written in elegant German. All three memoirs are extracted from the "Abhandlungen der k. böhm. Gesellsch. der Wissenschaften" (vi. folge, 6 Band). Whether the practice obtains on the Continent to any extent of thus reprinting separate memoirs we cannot say, but we learn from a distinguished physicist that such is the case with the Vienna "Transactions," of which any paper may be had separately through a bookseller at a price published in the table of contents. This is a laudable practice, and in these columns the desirableness of its introduction into this country has been more than once dwelt upon. Happily, we learn from the President's address (NATURE, vol. xi. p. 197) that the Royal Society have the matter under consideration. As the reasons *pro* and *con* have so recently been given, it would be out of place here to dwell longer on the matter. We hope, however, that it will be possible on some terms or other to get separate memoirs in the case of those societies whose publications embrace two or more specialities. A practice obtains in some societies of allowing readers of papers to have extra copies of their own papers, at reasonable prices, for distribution. Possibly, the best mode of proceeding at present for a specialist who wants a particular paper is for him to apply to the author on the chance of his having these extra copies.

Botanischer Jahresbericht: Systematisch geordenetes Repertorium der Botanischen Literatur aller Länder. Herausgegeben von Dr. Leopold Just. (Berlin: Gebrüder Bertraeger, 1873.)

WITH the rapid increase of botanical literature of every kind during the last few years every working botanist must have proved the inconvenience of having no work of reference at hand like this "Botanischer Jahresbuch," and particularly those who are engaged in any special inquiry involving much research and an extensive knowledge of the literature of his subject. As the preface to this excellent *résumé* of the botanical literature of 1873 truly says, "Almost every botanist has passed through the experience of having read through bulky treatises with the expenditure of much time, only to complain that it is so much time lost. On the other hand, it happens frequently enough that very important treatises appear in periodicals where they are not exactly looked for by botanists, and consequently frequently remain unknown and unused for years." This need no longer be the case, if the success which this undertaking thoroughly deserves is granted it, and warrants the continuance of it from year to year.

The work has been published in two half-volumes, and the first part or half-volume summarises the investigations which have been made, and the literature published on the various groups of the Cryptogamia, together with divisions on the morphology of cells, the morphology of tissues, the special morphology of conifers, the morphology of the Phanerogamia (monocotyledons and dicotyledons), and Physical and Chemical Physiology, continued in the second half-volume, which further contains divisions on fructification and reproduction, hybridation, origin of species. Lists and notices of systematic monographs and extra-European floras stand next in order, together with Palæobotany, treated according to the succession of formations, beginning with the Primary or Palæozoic formation. The other portions embrace pharmaceutical botany, technical botany, botany applied to forest management, diseases of plants, and geographical distribution.

The aim of the editors has been to give as complete a view as possible of the literature of the several subjects above mentioned, and with regard to most of the departments this has been successfully accomplished, but omissions occur in some of the divisions, particularly in those on the cellular cryptogams and the morphology of tissues. No notice, *e.g.*, is taken of the important work of Strasburger on *Azolla* and the Lycopodiaceæ, nor the work of Juranyi on the spores of *Salvinia natans*. Some of the omissions Dr. Just promises to rectify in the next year's volume.

In this deficient section, however, it may be observed that all newly constituted species amongst the Diatomaceæ and fungi are carefully noted, and of the latter brief descriptions are given. As an appendix to the fungi appears a section on the nutrition of the lower organisms.

The above-mentioned divisions of the work embrace all that has been published in the time specified (1873) in the German, French, and English languages. The literature of other countries is treated in special sections, each under the care of an editor chosen for the purpose; viz., Dutch, Italian, Russian, and Hungarian botanical literature. Dr. Just laments that it has not been possible to include the literature of Denmark, Norway, and Sweden in this first volume. This, however, will not be omitted in future volumes, a suitable editor having been chosen for the purpose.

LETTERS TO THE EDITOR

[*The Editor does not hold himself responsible for opinions expressed by his correspondents. Neither can he undertake to return, or to correspond with the writers of, rejected manuscripts. No notice is taken of anonymous communications.*]

Sub-Wealden Exploration

IN NATURE, vol. xi. p. 267, the Rev. J. F. Blake calls attention to the announcement that it is proposed by the Sub-Wealden Exploration Committee to abandon the present bore-hole and to begin again near the same spot. He asks why should not another spot be chosen; and suggests that it would be advisable to bore much more to the north-east, because there the Palæozoic rocks would be nearer the surface, and because at the present hole we have already learnt all that is necessary. May I be permitted to reply to these remarks?

In the first place, it should not be forgotten that to search for coal measures, or even for the Palæozoic rocks, is only one object of the exploration. In a purely scientific point of view, it is as important to determine the thickness and character of the Oolitic strata—so far removed from their surface outcrop—as it is to reach the older rocks. If it be true that the boring has been put down where the Oolitic series is well developed, then this object will be the better attained.

But there is even now no proof that the Palæozoic rocks must necessarily be very deep at Netherfield. We are not entitled to infer from the great development of any one member of the Oolitic series that the lower members will also be well developed at that spot. The Oolitic rocks in the Boulonnais come on in force as we recede from the Palæozoic area of Marquise. The Kimmeridge clay is well developed in the Pays de Bray; it is 1,000 feet thick near Rouen, and, on its outcrop to the south-west of that city, is underlain by Lower Oolites. One might therefore well have supposed that in the Pays de Bray there

* There is an article "Sur l'Hypocycloïde à trois Rebroussements" in the "Nouvelles Annales" (pp. 21-31), Janvier, 1875.

© 1875 Nature Publishing Group